Space Weather Forecast

Issued on Saturday, 13 July 2024 at 01:20 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

Space Weather Forecast Headline: Minor radio blackouts (R1s) likely throughout. Minor geomagnetic storm intervals likely this weekend.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Activity fell to Low, with frequent small Common-class flares mainly emanating from the largest central sunspot group. This region remained the largest and most magnetically complex on the disc, but despite this the largest Common class flare originated from a smaller and simpler region in the southeast. The remaining regions, up to seven, were also small and magnetically simple, and either stable or with little change.
No Earth-directed Coronal Mass Ejections (CMEs) were noted in the period.

Solar Wind / Geomagnetic Activity: Slow solar wind conditions were observed, with the solar wind's magnetic field and the important north-south component both weak. The result of the solar wind measures was Quiet geomagnetic conditions.

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Moderate-class flares remain Likely, with the large central sunspot region the most probable source. No significant regions are due to depart or arrive through the period - keeping this risk flat throughout.

Solar Wind /Geomagnetic Activity: No Earth-directed CMEs currently feature in the forecast. Initial slow wind conditions are expected to be followed by a slight enhancement due to the onset of the fast winds from a coronal hole feature, these expected to arrive today (13th) and then persist for up to two days. The solar winds are expected to reach slightly elevated to elevated levels. Later in the period the solar wind is expected to decline to Background levels. Initially Quiet geomagnetic conditions are expected to increase to Active to Minor geomagnetic storm levels at times from later today into tomorrow, before reverting to Quiet to Unsettled conditions into the new UTC working week.

Energetic Particles / Solar Radiation: High energy proton flux carries a daily Slight Chance of rising to exceed S1 in response to any notable flares from AR3738. This risk increases very slightly as this region progresses westwards in the period, with other regions contributing relatively little.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	50	50	10	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	50	50	50	50
Very Active	R3 to R5 X	No	5	5	5	5

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	5	10	10	10
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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